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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/656,331 | 09/08/2003 | Wen-Shi Huang | 0941-0834P | 9211 |

2292 7590 06/21/2005

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EXAMINER

TAMAI, KARL I

ART UNIT PAPER NUMBER

2834

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/656,331 | HUANG ET AL. | |
| | Examiner | Art Unit | |
| | Tamai IE Karl | 2834 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The amended title of the invention, "Heat Dissipating Device" is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed, such as "A Combination Bearing Assembly Having Repulsive Magnetic Bearing Rings and a Sleeve Bearing".

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the opposite polar disposition generating repulsive magnetic forces (claim 12) and the identical polar disposition generating attractive magnetic forces (claim 13) must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The specification does not support a repulsive magnetic bearing having axially aligned rings with opposite polar dispositions because opposite polar dispositions inherently attract each other, and identical polar dispositions inherently repel each other. For the purpose of advancing prosecution on the merits, the examiner will assume the magnets of claim 12 attract each other, and the magnets of claim 13 repel each other.

5. The rejection of Claims 1-23 under 35 U.S.C. 112, second paragraph, is withdrawn.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 8, 9, 11, and 15-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishizuka (UK 2335242). Ishizuka teaches a bearing having an attractive magnetic upper 3/lower 4 bearings symmetrically disposed at opposite ends of the shaft which provide axial and radial forces on the shaft and a ball bearing 5 connected to the shaft 1 and base 2. The upper bearings 4 (also the first magnetic portion) having inner and outer rings (figure 4) which are radially aligned and having the poles axially offset with the same polar disposition, and where the lower bearings(also the second magnetic portion) having first (3a), second (3b) and third rings (3aa)(figure 5). With regards to claims 19-22, the bearing of figure 5 includes both axially and radially aligned magnets providing first and second magnetic portions. Ishizuka teaches that any combination of the bearings is acceptable (page 13, last paragraph). Ishizuka teaches the bearing supporting a fan (inherently includes a fan mounted to the shaft). Ishizuka teaches the magnets coupled to the base and shaft.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka (UK 2335242), in further view of Nakamura et al. (Nakamura)(JP 2000/078796). Ishizuka teaches every aspect of the invention except the upper and lower magnetic portions being symmetrical to the bearings. Nakamura teaches the magnetic bearings on opposite ends of the shaft and symmetrical to the bearings. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the fan motor of Ishizuka with the magnetic bearings symmetrical to the mechanical bearings to provide a motor of small size with a long life.

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The examiner notes the references are equally combined with Nakamura being the primary reference teaching every aspect of the invention except the base being the base 1 of a heat dissipating fan, where Ishizuka teaches that combination bearings are used in fan motors.

11. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka (UK 2335242) and Nakamura et al. (Nakamura)(JP 2000/078796), in further view of Wyatt (US 4471331). Ishizuka and Nakamura teach every aspect of the invention except the first and second magnet rings are axially aligned with opposite polarities and the radially aligned magnets being of opposite polarity. Wyatt teaches the first 35 and second magnet 39 are axially aligned to provide a cumulative centering force with rotor magnet 34 to center the rotor. Wyatt teaches the polarities of the magnets can be attractive (fig. 2) or repulsive (fig. 3). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the fan motor of Ishizuka and Nakamura with the first and second magnets axially aligned or with the magnets radially aligned with opposite polarities to effectively center the rotor as taught by Wyatt.

12. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka (UK 2335242), in further view of Mendelsohn (US 2582788). Ishizuka teaches every aspect of the invention except the first, second, and third magnets being axially aligned with opposite polarities. Mendelsohn teaches a shaft supported by

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axially aligned magnets with opposite polarities. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the fan motor of Ishizuka with the axially aligned magnets because Mendelsohn teaches to provide a powerful magnetic bearing.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka (UK 2335242) in further view of Weilbach et al. (Weilbach) (US 5019738). Ishizuka teaches every aspect of the invention except the first, second, and third magnets being axially aligned with identical polarities. Weilbach teaches a shaft supported by axially aligned magnets with identical polarities to provide good stiffness at high speeds. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the fan motor of Ishizuka with the axially aligned magnets being repulsive to provide a strong bearing even at high speeds as taught by Weilbach.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka (UK 2335242) and Nakamura et al. (Nakamura)(JP 2000/078796), in further view of Mehta et al. (Mehta)(US 5883449). Ishizuka and Nakamura teach every aspect of the invention except the bearing being a sleeve bearing. Nakamura disclose the bearings as any conventional bearings (black box). Mehta teaches that sleeve and ball bearings are used in fan motors. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Ishizuka and Nakamura with a sleeve bearing to help support the rotor as suggested by Nakamura and Mehta.

Response to Arguments

15. Applicant's arguments filed April 25, 2005 have been fully considered but they are not persuasive. Applicant's argument regarding the drawings and the 35 USC 112, first paragraph rejection is not persuasive. The specification does not support, nor does Figure 4a, show magnets of opposite magnetic poles providing repulsive forces.

Opposite Magnet Poles Attract each other, not repel. Applicant's argument that Ishizuka does not teach axial and radial forces is not persuasive; particularly Ishizuka teaches on page 2 that the bearings carry the radial load AND cancels forces in the axial direction. The bearings cancels the axial forces with an axial magnetic force that is attractive or repulsive depending on when polarity of the magnets on the rotor or the stator. Also on page 3-4, the axially magnetized magnets attract each other in the axial direction (axial forces) and provides great radial rigidity (radial forces). Applicant's argument, regarding claims 1, 15, and 19, that the magnets are not disposed in axial and radial directions is not persuasive because the claims do not require magnets position axially and radially directions, only that the forces act in axial and radial directions. Applicant's arguments regarding figure 5 and magnets 3a, 3aa, 3b, and 3bb are not persuasive. It is inherent that 3a is repelled by 3b due to the same magnetic poles repel, and it is inherent that 3a is attracted to 3bb and that 3b is attracted to 3aa because opposite magnetic poles attract; where these are clearly first and second magnetic portions. Applicant's arguments regarding the lack of axial force by the magnets 3a and 3aa is not persuasive, because the drawings clearly show the axial forces F1, F2, and F3. Applicant's argument regarding Wyatt (US 4471331) is not

persuasive. The Applicant is viewing the references individually rather than the combined teaching of both the magnetic bearing systems.

Conclusion

16. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
June 17, 2005



KARL TAMAI
PRIMARY EXAMINER